



# The Revolutionary War

Washington assumes command at Cambridge, Massachusetts.



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Major General Louis Duportail, by Charles Willson Peale.

**W**hen Congress organized the Continental Army on June 16, 1775, it provided for a Chief Engineer and two assistants with the Grand Army and a Chief Engineer and two assistants in a separate department, should one be established. Colonel Richard Gridley of Massachusetts, one of the few colonials with experience in the design and construction of batteries and fortifications, became General George Washington's first Chief Engineer. Another native of Massachusetts, Rufus Putnam, who succeeded Gridley as Chief Engineer in 1776, was one of his assistants while the Army remained in Boston.

From the start the predominantly defensive nature of the war convinced Washington he would need even more trained engineers, but he was continually frustrated in his efforts to find them. Qualified engineers were scarce because formal schooling in siegecraft, the erec-

tion of field fortifications, and technology was practically non-existent in America at the time. In response to Washington's plea for more engineers, Congress turned to France which was an enemy of Britain and the center of technical education in Europe. The French also had a long tradition of military engineering. Beginning in 1776 Frenchmen began to arrive in America to serve as engineers. Before the end of 1777 Congress had promoted one of them, Louis Duportail, to brigadier general and Chief Engineer, a position he held for the duration of the war. Frenchmen, joined by other foreigners, dominated the ranks of the engineers throughout the war.

When Duportail took command of the engineers he renewed the pressure begun by his predecessor to establish a permanent, separate and distinct engineering branch of the Army. His proposal included a provision for companies of engineer troops to be known as Sappers and

French artist's lithograph portrays action at Yorktown.

Bunker Hill, June 17, 1775,  
by H. Charles McBarron.



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Plan of attack for Yorktown,  
drawn by Jean Baptiste de  
Gouvion, October 29, 1781.

Thaddeus Kosciuszko, by  
Charles Willson Peale.



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Miners and to be officered by Americans. From their ranks would come the engineer officers to replace the French when they returned home.

On May 27, 1778, Congress finally authorized three companies of Sappers and Miners who were to receive instruction in erecting field works—a first step toward technical education—and were to direct fatigue parties, repair damaged works and erect new ones. Recruitment continued for more than two years with activation of the three companies on August 2, 1780. Meanwhile on March 11, 1779, Congress passed a resolution which formed the engineers in the Continental Army into the Corps of Engineers Duportail had sought.

Despite the shortage of engineers and the delay in forming companies of engineer troops, the Army's engineers made numerous contributions to the war. Engineer officers reconnoitered enemy positions and probable battlefields, wrote useful reports based on their observations, oversaw the construction of fortifications and drew detailed maps for commanders. Congress relieved some of the mapping burden when it appointed Robert Erskine as Geographer of the Army in 1777. Erskine and his successor, Simeon DeWitt, employed several assistants as did Thomas Hutchins, whom Congress appointed as Geographer for the Southern Army in 1780. Following this precedent, Congress added Topographical Engineers to the Corps of Engineers in 1813 and created a Topographical Bureau in the Engineer Department in 1818.

Engineer officers often took action which helped achieve decisive results. One such incident occurred during the siege of Boston. In February 1776, General Washington's council of war decided to draw the British out of Boston by erecting works on the unfortified Dorchester Heights. To achieve surprise the

Army needed to move quickly, but the ground was frozen more than a foot deep. Colonel Rufus Putnam, Washington's Chief Engineer, offered an innovative solution to the problem. He recommended using chandeliers—wooden frames filled with bundles of sticks—to raise the walls above ground. To the astonishment of the enemy, the Continentals erected the chandeliers in a single night (March 4-5). When it was determined three days later that the position could not be taken, the British found that their hold on Boston was no longer tenable and evacuated the city.

The next year Lt. Col. Thaddeus Kosciuszko, a native of Poland commissioned as an engineer officer in the Continental Army, placed obstructions that significantly impeded Burgoyne's advance toward Albany after the fall of Fort Ticonderoga. Later Kosciuszko helped design the network of defenses at West Point and in 1781 he was instrumental in allowing Nathaniel Greene's Southern Army to evade capture by the enemy. During the difficult winter months of 1777-1778, Washington followed Duportail's advice: wear down the British at Philadelphia while avoiding attack. This strategy helped preserve the Army.

The Corps of Engineers and its companies of Sappers and Miners enjoyed their finest hour in October 1781 at Yorktown, where Washington conducted a siege in the classical manner of Sebastien de Vauban, the great French master of siegecraft. Engineer officers, numbering 13 in the combined French and American armies, performed crucial reconnaissance, and with the 50 men in the Sappers and Miners, planned and executed field works. In addition the Sappers and Miners assembled fortification materials, erected gun platforms, transported cannon and ammunition, and cleared the way for the decisive in-

fantry assault on Redoubt 10. After the battle Washington cited Duportail for conduct which afforded "brilliant proofs of his military genius, and set the seal of his reputation."

When the Revolution ended in 1783, a debate followed on the nature of the peacetime establishment of the Army. Proposals regarding the engineers varied. They included a union of the engineers with the artillery and the establishment of an academy to provide training. Retaining an engineer presence in the Army was seen as necessary by those who favored a centralized system of fortifications. Engineers would be needed to build and maintain them. Two arguments in favor of retaining the engineers drew directly upon Revolutionary War experience. Without a permanent, trained Corps of Engineers, it was maintained, the new nation would be forced to call on foreigners again in time of war. Moreover, as the Revolutionary War had demonstrated, it was extremely difficult to put together an effective technical organization in a short time. But Congress did not approve a peacetime Army and with that decision went any hope of retaining the Corps of Engineers. By the end of 1783 the Corps and its companies of Sappers and Miners had mustered out of service.